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"Standards Based Grading: Concept Mastery vs Effort, Behavior & Cuteness"

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PROBLEMS WITH ASSESSING AND REPORTING STUDENT ACHIEVEMENT AND PROGRESS

- 1) What does a letter grade mean...
 - a. To a student?
 - b. To a parent?
- 2) Does a "B" from Ms Jones mean the same as a "B" from Mr Smith?
- 3) Is a student who receives a "C" based upon 100% homework completion and 50% test average REALLY ready to move on to the next level of math?
- 4) Does "trying hard" and "well-behaved" qualify a student to "pass", and move on to the next math course?
- 5) What do you say to a parent whose student got an "A" in math class and Level 1 on the WASL?
- 6) Does a letter grade really tell a parent what their student has learned?
- 7) Does a letter grade really tell a parent what their student's specific strengths and weaknesses are?
- 8) How do you motivate students who experience early failure and see no way to climb out of the hole they're in?
- 9) How do you convince students that "D", or even "C" is NOT good enough?
- 10) How do you get students to continue to work on concepts they still have not mastered when their overall grade is "B" or "A"?

Guidelines for Grading

(adapted from Ken O'Connor and Rick Stiggins)

1. Individual achievement is the only basis for grades.
2. Sample student performance; do not mark everything and do not include all marks in grades.
3. Grade in pencil; keep records so they may be updated easily.
4. Relate grading procedures to learning goals (expectations, standards).
5. Crunch numbers carefully.
6. Use criterion-referenced (i.e., absolute or preset) standards to distribute grades and marks.
7. Use quality assessments "of learning" and "for learning".
8. Discuss grading with students at the beginning of instruction.

Grading Practices that Inhibit Learning

1. Inconsistent grading scales-- The same performance results in different grades, in different schools or classes.
2. Worshipping averages-- Insisting on using all of the math to calculate an average, even when "the average" is not consistent with what the teacher knows about the student's learning.
3. Using zeros indiscriminately-- Giving zeros for incomplete work has a devastating effect on averages. Often zeros are not even related to learning or achievement but to nonacademic factors such as behavior, respect, attendance, etc.
4. Following the pattern of assign, test, grade, and teach-- When teaching occurs after a grade has been assigned, it is too late for the students. They need lots of teaching and practice that is not graded, although it should be assessed and used to enhance learning before testing takes place.
5. Failing to match testing to teaching-- Many teachers rely on trick questions, new formats, and unfamiliar material. If students are expected to perform skills and produce information for a grade, these should be part of the instruction.
6. Ambushing students-- Pop quizzes are more likely to teach students how to cheat on a test than to result in learning. Such tests are often control vehicles designed to get even, not to aid understanding.
7. Suggesting that success is unlikely-- Students are not likely to strive for targets that they already know are unattainable to them.

8. **Practicing "gotcha" teaching**-- A nearly foolproof way to inhibit student learning is to keep the outcomes and expectations of their classes secret. Tests become ways of finding out how well students have read their teacher's mind.

9. **Grading first efforts**-- Learning is not a "one-shot" deal. When the products of learning are complex and sophisticated, students need lots of teaching, practice, and feedback before the product is evaluated.

10. **Penalizing students for taking risks**-- Taking risks is not often rewarded in school. Students need encouragement and support, not low marks, while they try new or more demanding work.

11. **Failing to recognize measurement error**-- Very often grades are reported as objective statistics without attention to weighting factors or the reliability of the scores. In most cases, a composite score may be only a rough estimate of student learning, and sometimes it can be very inaccurate.

12. **Establishing inconsistent grading criteria**-- Criteria for grading in schools and classes often change from day to day, grading period to grading period, and class to class. This lack of consensus makes it difficult for students to understand the rules.

Adapted with permission from R. L. Canady and P. R. Hotchkiss, "It's a Good Score: Just a Bad Grade." *Phi Delta Kappan* (September, 1989): 68-71.

What Should Not Be in Grades?

Effort

Hard work (effort), frequent responses to teacher questions, intense involvement in class activities (participation), and a positive, friendly, and happy demeanor (attitude) are all highly valued attributes, but they should not be included directly in grades because they are very difficult to define and even more difficult to measure. Factoring effort into the grade may send the wrong message to students. In real life, just trying hard to do a good job is virtually never enough. (Stiggins 1997,418). He also noted that "students can manipulate their apparent level of effort to mislead us" (418).

Participation & Attitude

Stiggins suggested that participation is often a personality issue—some students are naturally more assertive while others are naturally quieter. This is often related to gender and/or ethnicity, and so we run the risk of these biases if we include effort and participation in grades.

The inclusion of attitude presents similar problems; positive attitude has many dimensions, is very difficult to define, and is extremely difficult to measure. It is also very easy to manipulate—students can fake a positive attitude if they think or know it will help their grade.

Strong effort, active participation, and positive attitude are highly valued attributes, but, if grades are to have clear meaning, they should not be included in grades. Effort, participation, attitude, and other personal and social characteristics need to be reported separately from achievement.

Late Work

A major problem that overlaps both parts of this guideline is the issue of submitting required work on time. If it is more important that the work be done (and learning occur) than when the work is done and the learning occurs, then penalizing students for late work is not appropriate. This does not mean that handing work in on time is not important, but as once was said in a lecture, "It is best to do it right and on time, but it is better to do it right and late than the reverse" (specific source unknown). The intent here is not to encourage students to hand work in late; the intent is that tardiness be dealt with appropriately, so grades have meaning and communicate clear, easily interpretable information about achievement.

ASSESSING INDIVIDUAL CONCEPTS ON TESTS

We no longer assign a single test "score", but rather, we record the percent score the student earned on EACH concept. This helps emphasize that EVERY concept is important, and clearly identifies concepts where more work is needed. An example of the front page of a quiz, showing the scoring table, is shown below. For ease of scoring, we group test questions by concept (i.e., #1-5 are Add/Subtract Integers).

PRE-ALGEBRA QUIZ # 1

Concept	Mastered	Improving	Need Help
Add/Sub Integers			
Mult/Div Integers			
Solve 2-step equations			
Plot points			
Powers of 10			

1. Evaluate each expression

a. $8 + -6 =$

b. $-5 + -3 =$

c. $7 - - 2 =$

d. $-3 - 8 =$

e. $-1 - - 5 =$

GRADE BOOK ENTRIES

We no longer include homework or other assignments in the grade book. We know that much homework is of low quality, and too much is simply copied from other students. We found that many students ended up passing courses despite failing all the tests due to points earned by simply turning in all homework papers. These students invariably struggled the next year, since they never really learned the material. We also do not include any behavior points (plus or minus) in our grades. Our bottom line now is that if grades are being used to determine moving up to the next level course, then they should reflect **ACHEIVEMENT** rather than effort, behavior or "cuteness".

In the grade book, we list each concept as a separate entry, as shown below.

STUDENT	Add Integers	1-step eq	Factoring	Project	Graphing	Final grade
Godzilla	80	80	80	80	85	81%--B-
King Kong	INC	INC	95	100	95	58%--F
Mothra	96	94	100	60	INC	70%--C-
Rodan	94	96	95	75	85	89%--B+

*** INC = 0% for purposes of grade calculations

HOWEVER, we **initially** only enter percentages that are ABOVE 80%. Concepts which have scores below 80% are listed as "Incomplete". We do not want students to settle for less than that level of mastery. We want to eliminate the "good enough" attitude we see so often. So, "Incomplete" entries count as "zero" for grade calculations. Students now have a strong reason to strive toward mastery. This is where retesting comes in.

TESTING PROCEDURES

The assessment process begins with a Practice Test, which is not included in the student's grade. This formative assessment identifies concepts which require additional practice or re-teaching. The Practice Test is of the same length and difficulty as the Record Test which will follow later.

Based upon the results of the Practice test, teachers spend 1-3 days reviewing, re-teaching and practicing the concepts to be assessed. Then the Record Test is administered. The Record Test is the of the same length and difficulty as the Practice Test, but is NOT identical to it (numerical values are different, and story problems are rewritten). The test will be scored by concept, with 80% being the standard for mastery.

RE-TESTING

Students are expected to get extra help and practice on concepts on which they scored less than 80%. Once they have a better understanding of the material, they take a retest on THOSE CONCEPTS ONLY. If they earn at least an 80% on the retest, an 80% is then recorded in the grade book for that concept, replacing the "Incomplete".

If only entering scores of 80% or better is the "stick", then retesting is the "carrot" in our system. Students always have a chance to work themselves out of a hole or failing status. It is never too late to demonstrate that they have learned the material, and to get credit for that effort. If the goal of education is LEARNING, then the student who finally "got it" the last week of the semester should get just as much credit as the student who "got it" the first week. If learning is not a race, then there should be neither credit nor deduction for speed (how long it took student to learn the material).

The first year of this program, we allowed unlimited retest attempts. However we were forced modify this policy in order to manage the large number of retests. In addition, it became clear that many students were not making serious efforts to learn the material prior to taking another retest.

Currently, we provide **one** retest opportunity in class, and a second retest outside of class hours. Thus the student has 3 opportunities to demonstrate mastery (all after the Practice Test). Should a student exhaust all retest opportunities and still not achieve the 80% standard, at that time the score earned on the most recent attempt will be entered into the grade book. This eliminates the "zero effect", and also ensures that the current grade most accurately communicates actual student achievement and progress.

FINAL EXAMS

Semester Final Exams are graded by concept, similar to other tests. The Final Exam serves as one last retest opportunity. For any concepts which have not yet been mastered, if the score earned on the Final Exam is higher than the previously recorded score, the Final Exam score for that concept will replace the earlier score. This helps ensure the grade more accurately reflects the student's actual achievement, and provides students an incentive to do well on the Final Exam. In fact, a student who is failing prior to taking the Final Exam could raise their overall grade to a "B" by mastering all or most of the concepts on the Final Exam (several students have in fact done this).

In addition, the overall Final Exam score (a single grade) will be entered in the grade book, weighted equally with all other entries. This provides students who already have good grades an incentive to do their best on the Final Exam, as it could improve their grade (ie, B+ to A-). The table below shows how the Final Exam would affect the final grades for the students above on page 7.

STUDENT	Add Integ	1-step eq	Factoring	Project	Graphing	Final Exam	Final grade
Godzilla	80	80	80	80	85	93	83%--B
King Kong	60	80	95	100	95	74	84%--B
Mothra	96	94	100	60	30	58	73%--C
Rodan	91	96	95	75	85	95	90%--A-

Mastery Test Corrections & ACTION PLAN

Name_Period _____ Circle Re-Test Day: TUES./WED./THURS.

1. Mastery Test Objective(s) Yet to be Mastered:

#1 _____

#2 _____

#3 _____

#4 _____

#5 _____

2. Most Recent Score(s): _____

Objective #1 _____ % with _____ % improvement needed for 80% MASTERY.

Objective #2 _____ % with _____ % improvement needed for 80% MASTERY.

Objective #3 _____ % with _____ % improvement needed for 80% MASTERY.

Objective #4 _____ % with _____ % improvement needed for 80% MASTERY.

Objective #5 _____ % with _____ % improvement needed for 80% MASTERY.

3. I have taken the following:

_____pre-test ___in-class test ___in-class re-test ___after school re-test

4. I realize that I must complete all re-tests for this Mastery Objective by _____ or I will have to wait until the FINAL EXAM in **January/June** to change my INC (0) score.

sign: _____

TEST CORRECTIONS

- Problems I need to do over (Test Corrections): # _____
- Complete test corrections on the back side of this sheet OR on a clean sheet of paper and staple them to this.

ACTION PLAN

- I was unprepared for the following:
- My plan of action for success on the next test is (make a list):
- Put a STAR by each action you actually fulfilled.

* Action suggestions: make test corrections, review notes, attend study tables and ask for help, visit your math teacher, study with a friend or tutor, work extra problems from the text, get help from a family member, go to the Prentice Hall website.

REPORTING PROGRESS TO PARENTS & STUDENTS

Grading by concepts has caused us to change the way in which we communicate progress to parents and students. Use of computerized grading programs allows us to print out progress reports which show the grades by concept just as entered in the grade book. These progress reports allow the teacher, the student and the parent to see exactly which concepts the student has mastered and those where they will need some remediation and practice. For students with tutors, or who receive assistance through Title 1/LAP, it shows exactly what they should be working on in order to prepare for retests. We teachers can now more clearly communicate to parents how well their students are doing, and how they can help their students at home

LESSONS LEARNED

1) Teachers' evaluation

- a. Clearly identifying concepts helps align curriculum planning and assessment with State Standards.
- b. The breakdown by concept, rather than chapter or activity, improves parent communication by clearly showing which concepts/skills the student has and has not mastered.
- c. Students seem more focused on learning a concept, rather than simply getting a certain grade.
- d. Some students are not making much effort to actually remediate the concepts prior to retesting (apparently hoping to get lucky this time), resulting in repeated attempts to retest.
- e. The large number of retests require a LOT of time to administer and correct.
- f. Due to "Incomplete" equating to a "zero" in the grade book, students who had not yet retested had very low grades on mid-semester progress reports. However, by the end of the semester the passing rate was similar to, or better than, it had been in past years.

2) Students' evaluation (based upon surveys)

- a. Favorable towards the opportunity to retest (72%).
- b. Mixed feelings on 80% standard for mastery.
- c. Favorable towards having tests graded by individual concepts.
- d. Mixed feelings on grades being based solely on achievement.

2) Parents' evaluation (based upon surveys)

- a. Highly favorable towards grades being based solely on achievement (71%).
- b. Highly favorable towards 80% standard for mastery (72%).
- c. Highly favorable towards having tests graded by individual concepts (73%).
- d. Highly favorable towards the opportunity to retest (91%).
- e. Highly favorable towards progress reports itemized by concept (81%).

MATH PASSING RATES

COURSE	JAN 2005	JUNE 2005	JAN 2006	JUNE 2006	JAN 2007
PRE-ALGEBRA	70%	70%	73%	72%	85%
ALGEBRA	81%	80%	78%	81%	84%
GEOMETRY	90%	94%	96%	97%	99%

10th Grade WASL Math Passing Rates

2002	2003	2004	2005	2006
37 %	41 %	46 %	49 %	55 %

STUDENT & PARENT SURVEY DATA (November, 2004)

1. How do you like/dislike the new grading policy, under which letter grades are based upon achievement, not effort or behavior?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
Parents	29 %	42 %	20 %	5 %	4 %	188
Students	13 %	21 %	31 %	19 %	16 %	455

2. How do you like/dislike having tests graded by individual math concepts, rather than a single grade for the entire test?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
Parents	30 %	43 %	20 %	4 %	3 %	188
Students	25 %	25 %	23 %	17 %	10 %	455

3. How do you like/dislike the policy establishing 80% as the standard for mastery?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
Parents	27 %	45 %	16 %	6 %	6 %	188
Students	12 %	26 %	21 %	20 %	21 %	455

4. How do you like/dislike the requirement to retest math concepts that have not been mastered?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
Parents	52 %	39 %	6 %	1 %	2 %	188
Students	41 %	31 %	17 %	7 %	4 %	455

5. How useful are progress reports listing performance on specific math concepts, rather than individual assignments?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
Parents	58 %	23 %	13 %	3 %	3 %	188
Students	19 %	33 %	29 %	13 %	6 %	455

PARENT SURVEY DATA (2004 & 2005)

1. How do you like/dislike the new grading policy, under which letter grades are based upon achievement, not effort or behavior?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
2004	29 %	42 %	20 %	5 %	4 %	188
2005	27%	42%	20%	8%	3%	230

2. How do you like/dislike having tests graded by individual math concepts, rather than a single grade for the entire test?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
2004	30 %	43 %	20 %	4 %	3 %	188
2005	33%	41%	22%	3%	1%	230

3. How do you like/dislike the policy establishing 80% as the standard for mastery?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
2004	27 %	45 %	16 %	6 %	6 %	188
2005	34%	39%	15%	6%	6%	230

4. How do you like/dislike the requirement to retest math concepts that have not been mastered?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
2004	52 %	39 %	6 %	1 %	2 %	188
2005	59%	31%	7%	2%	1%	230

5. How useful are progress reports listing performance on specific math concepts, rather than individual assignments?

	Like Very Much	Like	Not Sure	Dislike	Dislike Very Much	Total Responses
2004	58 %	23 %	13 %	3 %	3 %	188
2005	57%	25%	13%	3%	2%	230